SERVICE MANUAL

FISHER

CR-7700
(SILVER)

CR-7700
(BLACK)

Stereo Cassette Tape Deck
(EUROPE)

CR-7700 (SILVER)

CR-7700 (BLACK)

THE FIRST NAME IN HIGH FIDELITY

SPECIFICATIONS

Tape	CrO2, FeCr and Normal tape
Recording system	AC bias, 1/4 track stereo
Erasing system	AC erasing, 1/2 track
Tape speed	1-7/8 ips. (4.75 cm/sec.)
Recording time	60 min. (C-60 cassette tape)
Rewind & Fast forward time time	90 sec. (C-60 cassette tape)
Wow & Flutter	0.05% WRMS (±0.18% DIN)
Frequency response	30 – 16,000Hz (CrO2 tape) 30 – 16,000Hz (FeCr tape) 30 – 13,000Hz (Standard tape)
Signal to noise ratio	64 dB (Dolby switch ON) 54 dB (Dolby switch OFF)

Input	MIC; 10k ohms (0.3 mV) REC/PLAY: 10k ohms (1 mV) LINE IN: 60k ohms (60 mV)
Output	REC/PLAY: 3k ohms (0.6 V) LINE OUT: 3k ohms (0.6 V) HEADPHONES: 8 ohms to 10k ohms (30 mV)
Power source	AC: 110/125/220V, 50/60Hz
Dimensions	15-13/16"(W) x 11-7/8"(D) x 5-15/16"(H) (400 x 300 x 150 mm)
Weight	Approx. 13 lbs. 4 ozs. (6kg)

* Specifications subject to change without notice.

MECHANISM ADJUSTMENTS

(1) Replacement of magnetic heads

Unsolder or solder the head leadwires quickly to avoid any damages of the heads by heat of the soldering iron.

(A) Replacement of REC/PLAY head

Remove the REC/PLAY head (76) by unfastening the two pan head screws (Y3 2 x 8mm) fixing the REC/PLAY head shown in figure one.

(B) Replacement of ERASE head

Remove the ERASE head (77) by unfastening the two pan head screws (Y4 2 x 12mm) fixing the ERASE head shown in figure one.

* See the cabinet exploded view to remove the mechanism chassis.

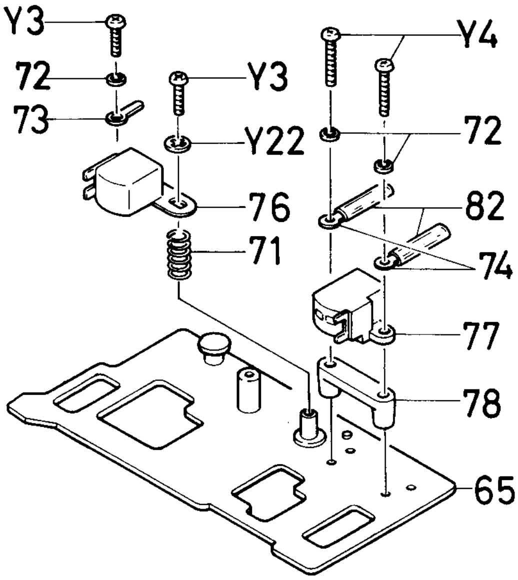


Fig. 1

(2) Head azimuth

Remove the toplid by sliding it upwards.

Load the adjustment tape (VTT-658) and operate the unit in the playback mode.

Turn the head azimuth screw (Y3) clockwise or counterclockwise through the adjustment hole to obtain maximum LINE OUTPUT as shown in figure two. Repeat the adjustment on both channels and both sides of the tape.

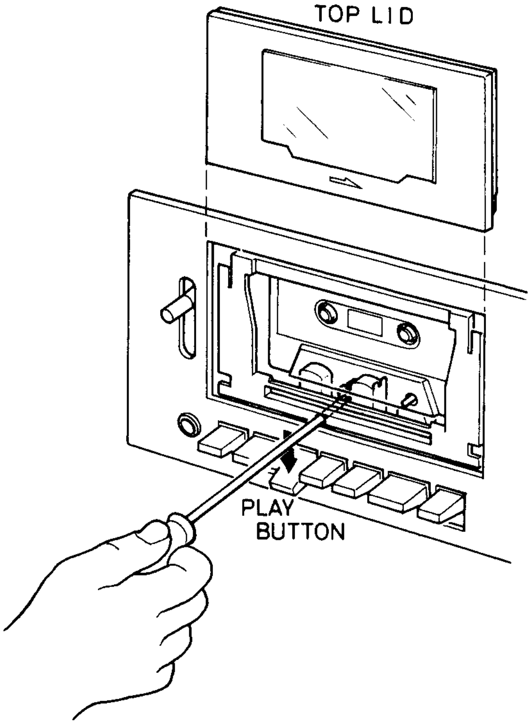


Fig. 2

(3) Torque and tension

(A) Take-up torque

Measure with torque gauge (figure three)

Play	30 ~ 60gr/cm
Fast forward	55 ~ 90gr/cm
Rewind	55 ~ 90gr/cm

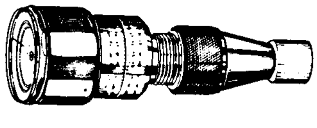


Fig. 3

(B) Back tension

Measure with tension gauge.

To use a tension gauge, make a hole in the side of the cassette as shown in figure four.

Be careful that the tape does not rub against the edge of the cassette; these will make correct measurement impossible.

Play	Less than 5gr/cm
Fast forward	Less than 5gr/cm
Rewind	Less than 5gr/cm

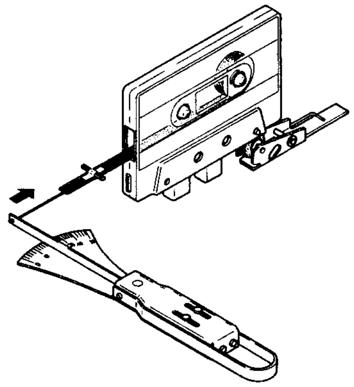


Fig. 4

(C) Tape tension

As shown in figure five, cut off a length of tape. Tie one end to a thread connected to the tension gauge, and leave the other end hanging loose. Operate the unit in PLAY mode and hold the tension gauge steady (do not move it to left or right).

When the tape stops, read the tension gauge.

If this reading is over 100 gram, no adjustment is needed.

If it is not over 100 gram, adjust the pinch roller pressure.

This is done by bending the coil spring 86 (141-2-852T-37600) shown in the mechanism exploded view.

Clean the pinch roller with alcohol only so that tape will not slip.

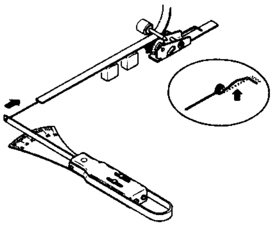


Fig. 5

(4) Tape speed

Remove the cabinet (108) by unfastening the four binding head screws (Y108 3 x 8mm) fixing the cabinet.

Remove the front panel (101) by unfastening the six washer head tapping screws (Y110 3 x 8mm and Y111 3 x 10mm) fixing the front panel.

See the cabinet exploded view for the details. Connect the tape speed counter to LINE OUTPUT terminal (left or right channel) of the unit. Load a tape speed test tape (MTT-111) and operate the unit in the playback mode.

Turn semi valiable resistor of the motor clockwise or counterclockwise through the adjustment hole to obtain 3 KHz ±10Hz indication of the tape speed counter.

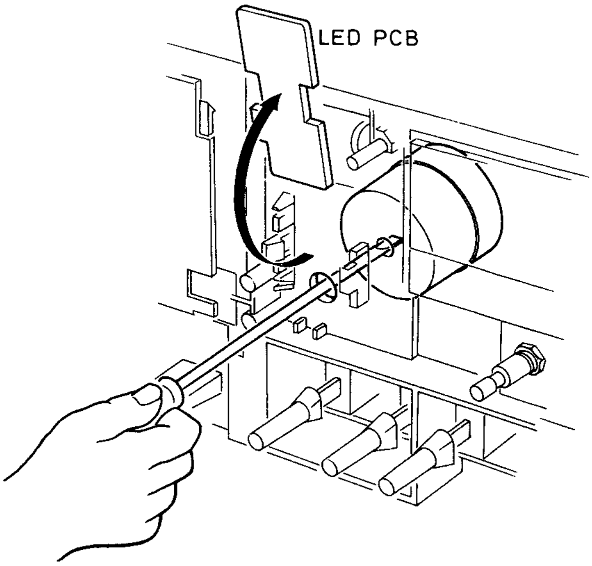


Fig. 6

(5) PAUSE timing

Operate the unit in the PLAY mode (Unload the cassette when making this adjustment).

Press the PAUSE button gradually and bend the arm of the pinch roller, using a pair of pliers, as shown in figure seven.

When properly adjusted, first the pinch roller should stop running and, then, the take-up reel. There should be a clearance of approximately 0.1 0.4mm between the capstan and the pinch roller when the pinch roller has come to a halt.

(a) There should be a gap of approximately 0.1 to 0.4mm when the take-up reel has stoped running. (b) Capstan (c) Pinch roller (d) Leverpinch roller assembly (e) Arm (f) Slide.

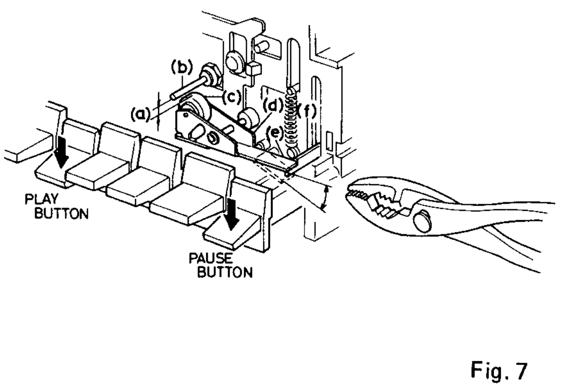


Fig. 7

AMPLIFIER ADJUSTMENTS

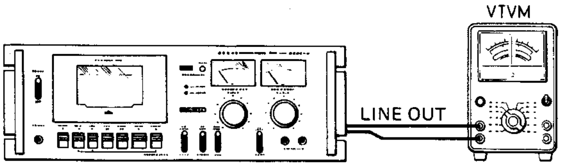
(1) Adjustment of head azimuth

Tape select switches: NORMAL
Dolby switch: OFF
Tape to be used: VTT-658

Adjust the head azimuth screw so that the LINE OUT level becomes maximum.

Repeat the adjustment on both channels and both sides of the tape.

* Adjust the OUTPUT LEVEL control knobs to maximum for the adjustments in steps one through five.

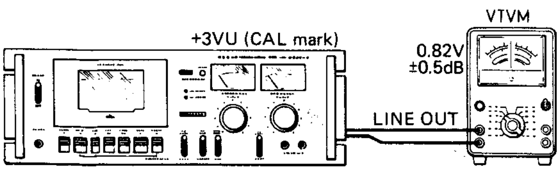

VTVM
LINE OUT

(2) Adjustment of playback ouput

Tape select switches: NORMAL
Dolby switch: OFF
Tape to be used: MTT-150

Operate the unit in the playback mode, and adjust SVR101, 201 so that the LINE OUT level becomes 0.82V ±0.5dB.

Make sure the VU meter indicates +3VU (CAL mark) at same time.

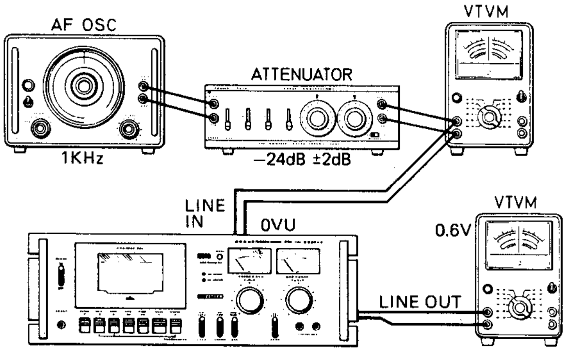

VTVM
+3VU (CAL mark)
0.82V
±0.5dB
LINE OUT

(3) Adjustment of VU meter

Tape select switches: NORMAL
Dolby switch: OFF

Set the unit to the REC, PAUSE state.

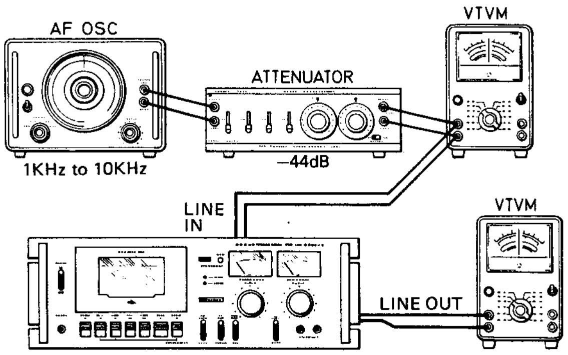
Adjust INPUT LEVEL control knobs so that the LINE OUT level becomes 0.6V, then adjust SVR103, 203 to obtain 0VU indication of the meter.


AF OSC
1KHz
ATTENUATOR
−24dB ±2dB
VTVM
LINE IN
0VU
VTVM
0.6V
LINE OUT

(4) Adjustment of REC/PLAY frequency characteristics and bias

Tape select switches: NORMAL
Input select switch: LINE IN
Dolby switch: OFF

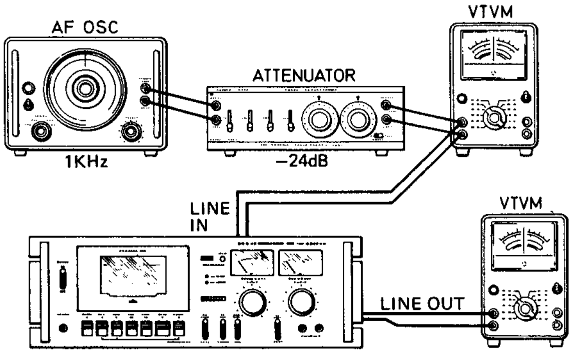
Set the input signal level at –44dB (1KHz and 10KHz). Operate the unit in the recording mode or playback mode, and adjust SVR301, 302 so that the VTVM indication for the 10KHz signal is equal to 0dB (with the 1KHz response as the 0dB reference).



(5) Adjustment of record gain

Tape select switches: NORMAL
Input select switch: LINE IN
Dolby switch: OFF

Set the input signal level at –24dB (1KHz).
Adjust SVR102, 202 so that the monitor output at the time of recording is equal to the record/playback output.

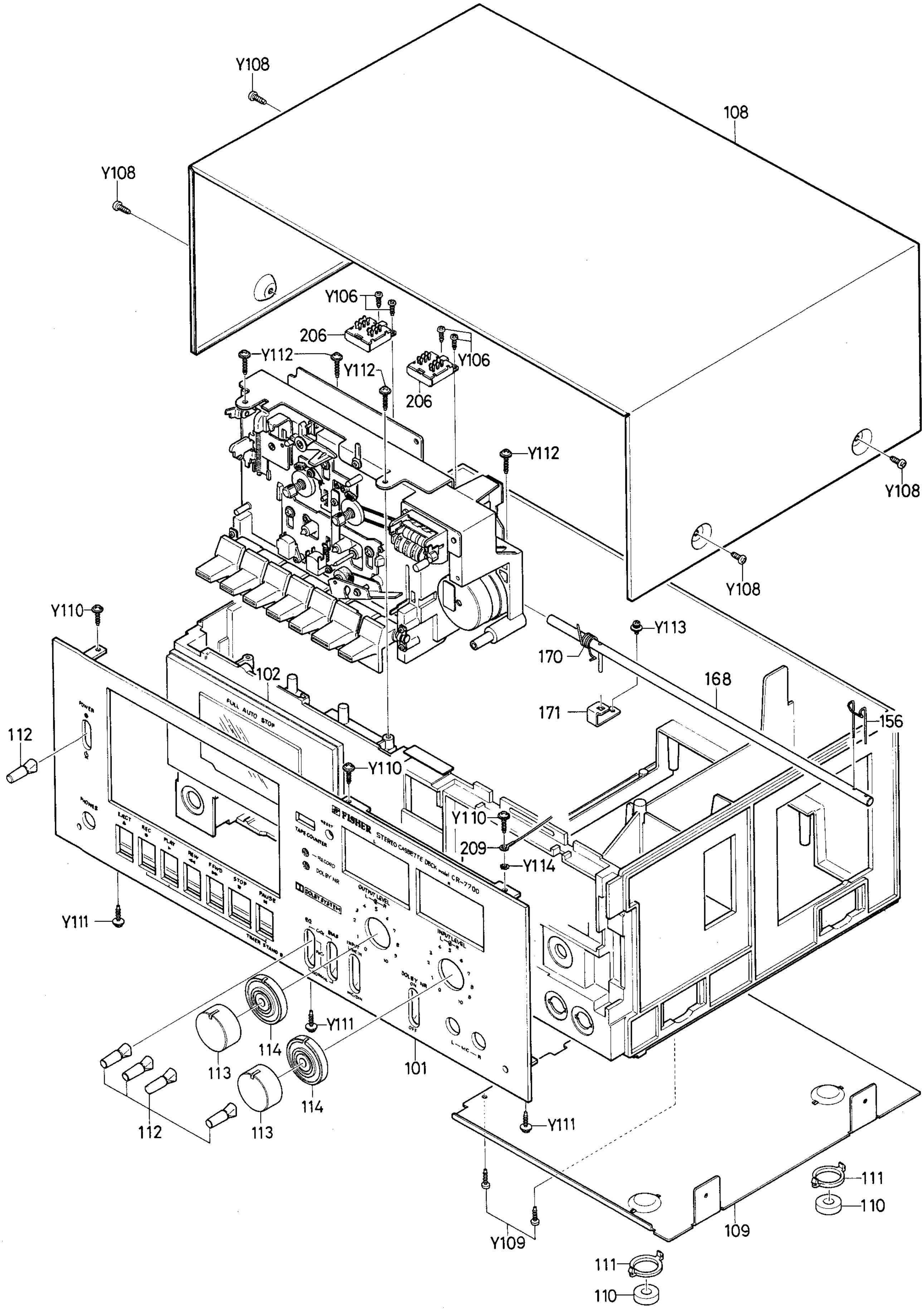


AMPLIFIER ADJUSTMENTS

* Adjust the OUTPUT LEVEL control knobs to maximum for all adjustments.

Items of adjustment	Tape to be used	Points of measurement	Input terminal	Frequency	Input level	Tape select switches	Input select switch	Dolby N.R switch	Input level control switch	Places of adjustment
Head azimuth	VTT-658 (10KHz, –15dB)	LINE OUT				NORMAL		OFF		Re-adjustment of head
Playback output	MTT-150 (Dolby tape)	LINE OUT VU meter				NORMAL		OFF		SVR101 SVR201
VU meter	Blank tape	LINE OUT VU meter	LINE IN	1KHz	–24dB ±2dB	NORMAL	LINE IN	OFF	Adjustment	SVR103 SVR203
REC/PLAY frequency characteristics and bias	Blank tape	LINE OUT	LINE IN	1KHz 10KHz	–44dB	NORMAL	LINE IN	OFF	The position of meter adjustment	SVR301 SVR302
Record gain	Blank tape	LINE OUT	LINE IN	1KHz	–24dB	NORMAL	LINE IN	OFF	The position of meter adjustment	SVR102 SVR202

EXPLODED VIEW (CABINET)


Y108
108
Y108
Y106
206
Y112
Y112
Y112
Y106
206
Y112
Y108
Y108
Y110
170
Y113
102
168
FULL AUTO STOP
171
156
112
Y110
FISHER
STEREO CASSETTE DECK model CR-7700
Y110
209
Y114
Y111
Y111
114
113
114
101
113
112
Y111
111
110
109
Y109
111
110

PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKING			
	141-6-132T-73614	Individual Carbon (Silver)	1
	141-6-132T-73615	Individual Carton (Black)	1
	141-6-231T-10200	Inner Polye bag, Lead Ass'y	1
	141-6-421T-34101	Schematic Diagram	1
	141-6-144T-31700	Foam Plastic Case	2
	141-6-231T-50700	Inner Polye bag, Set	1
	141-6-231T-10300	Inner Polye bag, AC cord	1
	141-6-231T-20300	Inner Polye bag, Inst. B.	1
	141-2-246T-15300	Sheet, Set	2
	141-6-451T-10100	Guarantee Card	1
	123-2-453R-00100	Serial No. Plate	1
	141-6-410T-13401	Instruction Manual	1
ACCESSARY			
	4-243T-13302	Lead Ass'y	1
CABINET			
101	141-0-122T-27700	Front Panel Ass'y (Silver)	1
	141-0-122T-27730	Front Panel Ass'y (Black)	1
102	141-0-124T-18001	Top Lid Ass'y (Silver)	1
	141-0-124T-18002	Top Lid Ass'y (Black)	1
104	141-2-224T-08100	Brakcet Lid	1
105	141-2-331T-30000	Holder, Right Side	1
106	141-2-331T-29000	Holder, Left Side	1
107	141-2-851T-99800	Spring Coil, Cassette Lid	2
108	141-2-111T-30800	Cabinet	1
109	141-2-125T-08702	Bottom Lid	1
110	141-2-441T-07800	Felt Cushion	4
111	141-2-174T-06300	Stand	2
112	141-0-262T-04200	Bracket Knob Ass'y (Silver)	5
	141-0-262T-04201	Bracket Knob Ass'y (Black)	5
113	141-0-163T-42700	Rotary Knob Ass'y, (Silver) R-CH	2
	141-0-163T-42701	Rotary Knob Ass'y (Black), R-CH	2
114	141-0-163T-42800	Rotary Knob Ass'y, (Silver) L-CH	2
	141-0-163T-42801	Rotary Knob Ass'y (Black), L-CH	2
115	141-2-241T-20500	Veil (Black only), Socket	3
CHASSIS			
151	141-0-311T-22913	Chassis Ass'y (Silver)	1
	141-0-311T-22914	Chassis Ass'y (Black)	1
152	141-2-741T-92700	Lever	1
153	141-2-445T-16200	Rubber, Cushion, AC Cord	1
154	123-2-453R-10500	Plastic Washer, AC Cord	1
155	141-2-411T-03500	Plate Nut	2
156	141-2-852T-37700	Spring Wire	1
157	141-2-851T-99700	Spring Coil	1
158	141-2-753T-07400	Shaft	1
159	141-2-465T-14300	Stopper	1
160	141-2-853T-51600	Spring Plate	1
161	141-2-451T-00800	Fiber Washer	1
162	141-2-322T-34000	Shield Plate, PT	1
164	141-0-581T-07100	Gear Assy	1
165	141-2-377T-19000	Bracket P.C. Board	1
166	141-2-852T-36600	Spring Wire	1
167	141-2-352T-24300	Spacer	1
168	141-0-753T-05200	Shaft Ass'y	1
170	141-2-852T-35800	Spring Wire	1
171	141-2-731T-46000	Slide	1
173	141-2-464T-08700	Fixer	3
174	141-2-457T-12900	Special Washer	1
175	141-2-411T-08900	Plute Nut	1
178	141-2-327T-17200	Insulator	
ELECTRICAL PARTS			
201	4-251T-75500	Power Trans.	1
202	4-511T-07301	Meter Ass'y	2
203	4-231T-65600	Switch, Power	1
204	4-235T-30500	Socket, Headphone	1
205	4-235T-30600	Socket, Mic	2
206	4-231T-43000	Switch, Muting	2
207	4-243T-77172	Power Cord	1
208	4-237T-06900	Terminal Board	2
209	123-2-472R-00401	Lug	1

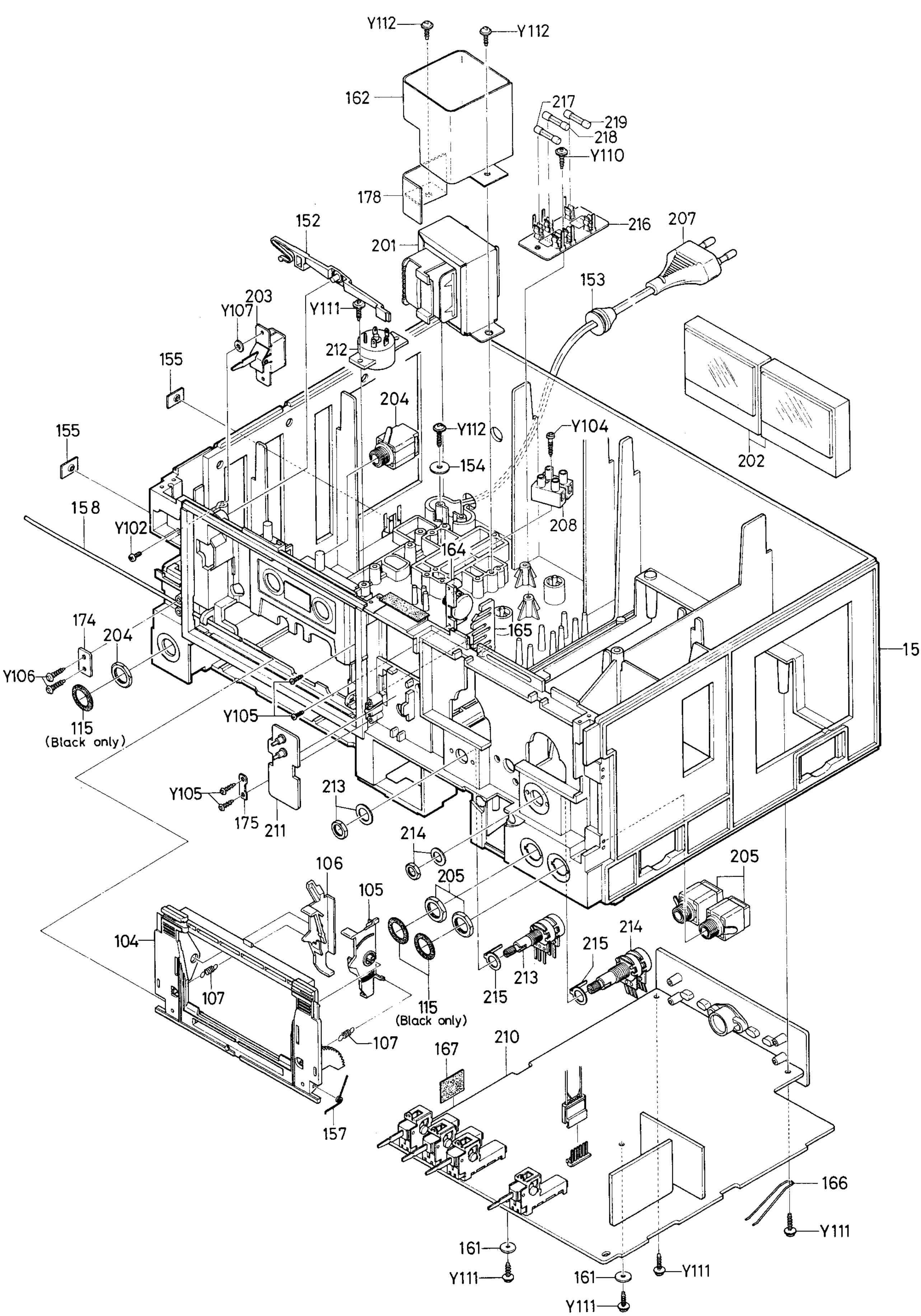
Ref. No.	Part No.	Description	Q'ty
ELECTRICAL PARTS			
212	4-231T-53600	Switch, Voltage Select	1
213	4-222T-56871	Variable Resistor IN	1
214	4-222T-56800	Variable Resistor OUT	1
215	141-2-472T-06900	Lug	2
216	141-0-383T-05200	Huse Holder Ass'y	1
217	4-234T-01771	Fuse 400mA, AMP	1
218	4-234T-01971	Fuse 800mA, Motor	1
219	4-234T-05971	Fuse 500mA Magnetic Coil	1
MAIN PCB ASSY			
210	141-4-230T-36972 (140-9-230T-83900)	P.C. Board Assy, Main (Not include DOLBY PCB Assy)	1
	4-231T-69173	Switch, Tape Select/Bias	2
	4-231T-58973	Switch, Dolby	1
	4-231T-59073	Switch, Mic	1
L101,201	4-252T-01019	Choke	2
L102,202	4-252T-07400	Choke 36mH	2
SVR301, 302	4-222T-39478	Semi fixed variable resistor 100K-B	2
SVR101, 201, 102, 202	4-222T-39475	Semi fixed variable resistor 10K-B	4
SVR103, 203	4-222T-39474	Semi fixed variable resistor 5K-B	2
	4-258T-12800	OSC Coil	1
	4-235T-33800	Socket, DIN	1
	4-236T-10273	Plug	1
	4-231T-45683	Switch	1
	4-231T-48580	Switch	1
	141-2-322T-21301	Shield Plate	1
		IC LA3115	1
Q102,103 104,202, 203,204 301		Transistor 2SC536	7
Q101,201		Transistor 2SC945 P	2
Q302		Transistor 2SD545 E	1
D305,304 306		Diode DS442	3
D301,302 303		Diode DS130Y or Diode 1S1885	3
D101,102 201,202		Diode 1N60 F	4
	RESISTORS		
R142,242		Carbon 1M ohm ±10% 1/4W	2
R118,218		Carbon 820K ohm ±10% 1/4W	2
R312,209, 109		Carbon 680K ohm ±10% 1/4W	3
R133,233, 105,205		Carbon 220K ohm ±10% 1/4W	4
R112,212, 143,243		Carbon 180K ohm ±10% 1/4W	4
R124,224,		Carbon 100K ohm ±5% 1/4W	2
R107,207		Carbon 56K ohm ±5% 1/4W	2
R113,213		Carbon 47K ohm ±5% 1/4W	2
R108,208		Carbon 39K ohm ±5% 1/4W	2
R114,214, 134,234		Carbon 22K ohm ±10% 1/4W	4
R135,235, 301,106, 206		Carbon 18K ohm ±10% 1/4W	5
R116,216, 117,217		Carbon 15K ohm ±10% 1/4W	4
R101,201, 104,204, 307		Carbon 10K ohm ±10% 1/4W	5
R102,202		Carbon 5.6K ohm ±10% 1/4W	2
R128,228, 132,232		Carbon 4.7K ohm ±10% 1/4W	4
R127,227, 131,231		Carbon 3.9K ohm ±10% 1/4W	4
R119,219		Carbon 3.3K ohm ±10% 1/4W	2
R130,230		Carbon 2.7K ohm ±10% 1/4W	2
R129,229		Carbon 1K ohm ±10% 1/4W	2

PARTS LIST

Ref. No.	Part No.	Description	Q'ty
MAIN PCB ASSY			
R110,210, 122,222, 126,226 138,238, 308,309		Carbon 2.2K ohm ±10% 1/4W	10
R111,211		Carbon 1.8K ohm ±5% 1/4W	2
R139,239		Carbon 1.2K ohm ±5% 1/4W	2
R303		Carbon 390 ohm ±10% 1/4W	1
R125,225		Carbon 220 ohm ±10% 1/4W	2
R317		Carbon 180 ohm ±5% 1/4W	1
R140,240		Carbon 100 ohm ±10% 1/4W	2
R304		Carbon 56 ohm ±5% 1/4W	1
R302		Carbon 8.2 ohm ±10% 1/4W	1
R123,223		Solid 680 ohm ±10% 1/2W	2
R310		Solid 330 ohm ±10% 1/2W	1
R136,236, 120,220		Carbon 1.5K ohm ±5% 1/4W	4
R311		Carbon 15 ohm ±10% 1/4W	1
R144,244		Carbon 33K ohm ±10% 1/4W	2
	CAPACITORS		
C121,221		Mylar 0.027μF 50V ±5%	2
C305,126, 226		Mylar 0.033μF 50V ±10%	3
C304		Mylar 0.022μF 50V ±10%	1
C110,210		Mylar 0.027μF 50V ±10%	2
C108,208		Mylar 0.0033μ 50V ±5%	2
C123,223		Mylar 680pF 50V ±10%	2
C124,224		Ceramic 180pF 50V ±10%	2
C125,225, 301,302		Ceramic 220pF 50V ±20%	4
C105,205		Ceramic 150PF 50V ±20%	2
C106,206		Ceramic 10pF 50V ±20%	2
C316		Ceramic 0.022μF 50V ±20%	1
C102,202		Mylar 0.0015μF 50V ±10%	2
C119,219		Mylar 0.047μF 50V ±10%	2
C120,220		Mylar 0.015μF 50V ±10%	2
C303		Mylar 0.0047μF 50V ±5%	1
C311		Electrolytic 1000μF 25V	1
C307,309		Electrolytic 220μF 25V	2
C308		Electrolytic 47μF 25V	1
C306,107, 115,207, 215		Electrolytic 4.7μF 25V	5
C104,204 112,113, 117,212, 111,213, 217,211		Electrolytic 2.2μF 25V	10
C118,218, 315		Electrolytic 1μF 25V	3
C312		Electrolytic 2200μF 16V	1
C314		Electrolytic 330μF 16V	1
C114,214		Electrolytic 22μF 16V	2
C103,203		Electrolytic 10μF 16V	2
C101,201		Electrolytic 47μF 6.3V	2
C116,216		Electrolytic 0.47μF 10V	2
C109,209		Electrolytic 4.7μF 16V	2
C313		Electrolytic 330μF 35V	1
C310		Electrolytic 470μF 25V	1
DOLBY PCB ASSY			
210	141-4-226T-79602	P.C. Board Assy, Dolby	2
		IC NE646BN	2
L402,502	4-252T-02800	Choke	2
L401,501	4-252T-07400	Choke	2
	4-236T-09600	Plug	2

Ref. No.	Part No.	Description	Q'ty
DOLBY PCB ASSY			
	RESISTORS		
R404,504		Carbon 270K ohm ±10% 1/4W	2
R405,505		Carbon 200K ohm ±5% 1/4W	2
R407,507		Carbon 47K ohm ±5% 1/4W	2
R406,506		Carbon 3.3K ohm ±5% 1/4W	2
R501,401, 410,510		Carbon 1K ohm ±10% 1/4W	4
R408,508		Carbon, 180 ohm ±5% 1/4W	2
	CAPACITORS		
C404,504 405,505		Electrolytic 1μF 25V	4
C410,510		Electrolytic 0.33μF 16V	2
C402,502 401,501		Electrolytic 47μF 16V	4
C406,506		Mylar 0.047μF 50V ±5%	2
C413,513		Mylar 0.027μF 50V ±5%	2
C416,516		Mylar 0.0039μF 50V ±5%	2
C418,518		Mylar 0.0022μF 50V ±5%	2
C403,503,		Al. Electrolytic 0.47μF 16V ±20%	2
C409,509		Electrolytic 0.1μF 16V	2
C414,514		Mylar 0.0056μF 50V ±5%	2
C411,511		Mylar 0.0047μF 50V ±5%	2
C417,517		Mylar 0.0027μF 50V ±5%	2
C415,515		Ceramic 150pF 50V ±5%	2
C407,507 512,412		Electrolytic 10μF 16V	4
LED PCB ASSY			
211	141-4-230T-37001	P.C. Board Assy, LED(140-9-230T-57801)	1
		LED SLP 114 B Red	1
		LED SLP 214 B Gr	1
R305		Solid Resistor 3.3K ohm ±10% 1/4W	1
R314		Carbon Resistor 820 ohm ±10% 1/4W	1
R306		Solid Resistor 1.2K ohm ±5% 1/2W	1
	141-2-352T-19400	Spacer, LED	2
SCREW MOUNTING			
Y101		Pan Head Screw 3 x 3mm	2
Y102		Pan Head Screw 3 x 8mm	1
Y103		Binding Head Screw 4 x 8mm	4
Y104		Tapping Screw 3 x 16	1
Y105		Tapping Screw 2.6 x 8mm	4
Y106		Tapping Screw 3 x 8mm	6
Y107		Fiber Washer 3.3 x 8 x 1mm	1
Y108		Binding Head Screw 3 x 8mm	4
Y109		Binding Head Tapping Screw 3 x 10mm	2
Y110		Tapping Screw with Washer 3 x 8mm	4
Y111		Tapping Screw with Washer 3 x 10mm	9
Y112		Tapping Screw with Washer 3 x 12mm	7
Y113		Pan Head Screw with Washer & Spring Washer 3 x 6mm	1
Y114		External Toothlock Washer 3 x 6.5 x 0.45mm	1
Y115			4

EXPLODED VIEW (CHASSIS)


Y112
Y112
162
217
219
218
Y110
178
152
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Y107
Y111
212
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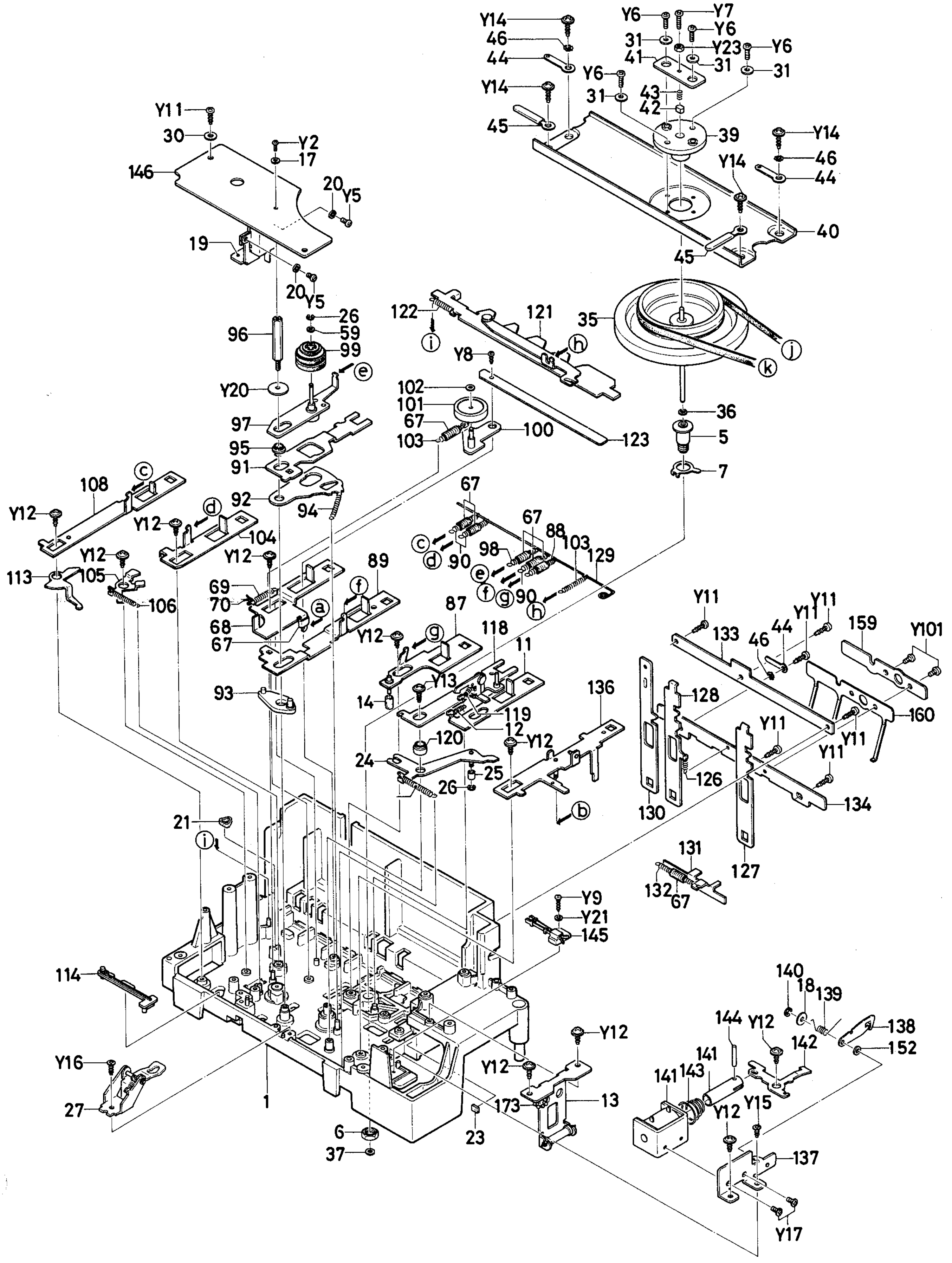
204
Y112
Y104
155
154
202
208
158
Y102
164
165
174
204
151
Y106
Y105
115
(Black only)
Y105
213
175
211
214
106
205
105
205
104
214
215
107
213
115
(Black only)
215
107
210
167
157
166
161
Y111
Y111
161
Y111
Y111

PARTS LIST

MECHANISM

Ref. No.	Part No.	Description	Q'ty
1	141-2-311T-22302 141-2-311T-22303	Chassis) or Chassis	1
2	141-2-315T-12700	Reinforcement	1
3	123-2-472R-00600	Lug	1
4	141-2-472T-01001	Lug	1
5	141-0-573T-02100	Bracket Assy, Flywheel	1
6	141-2-411T-02601	Plate Nut, Flywheel	1
7	141-2-472T-06000	Lug	1
8	141-9-811T-00100	Counter Ass'y (Silver)	1
	141-9-811T-04700	Counter Ass'y (Black)	
9	141-2-812T-06400	Bracket, Counter	1
10	141-2-564T-09200	Square Belt	1
11	141-2-731T-46600	Slide, Stop	1
12	141-2-851T-87701	Spring Coil	1
13	140-9-231T-00200	Switch Assy	1
14	141-2-490T-08000	Tape 5mm	1
15	141-9-731T-00300	Slide Assy	1
16	141-2-852T-40900	Spring Wire	1
17	141-2-453T-30102	Washer 2.1 x 4 x 0.5 Nylon	1
18	141-2-453T-00800	Washer 3 x 8 x 0.5	1
19	141-2-365T-34000	Bracket Switch	1
20	141-2-457T-30200	Special Washer, Switch	2
21	141-2-445T-17400	Rubber Cushion, Rec Slide	1
22	141-2-447T-31000	Cushion, FWD Slide	1
23	141-2-447T-37100	Cushion, Pause Slide	1
24	141-0-741T-18500	Lever Assy	1
25	141-2-683T-29800	Ring	1
26	141-2-457T-23800	Special Washer	1
27	141-9-741T-00301	Lever Assy, Play	1
28	141-2-445T-07000	Rubber Cushion	3
29	141-2-421T-12501	Special Screw, Motor	3
30	141-2-453T-02000	Washer 3 x 8 x 0.3	4
31		Washer 3 x 8 x 0.5, Motor	8
32	4-527T-09601	Motor Ass'y	1
33	141-9-661T-60100	Pulley Assy, Motor	1
34	141-0-545T-04300	Lever Pinch Roller Assy	1
35	141-0-521T-07400	Flywheel Assy	1
36	141-2-453T-30202	Washer 2.6 x 4.7 x 0.5 Nylon	1
37	141-2-457T-04300	Special Washer	1
38	141-2-561T-04001	Flat Belt	1
39	141-2-577T-05000	Bracket, Bearing	1
40	141-2-524T-07401	Bracket, Flywheel	1
41	141-2-411T-07300	Plate Nut	1
42	141-2-573T-06900	Bracket, Flywheel	1
43	141-2-855T-02100	Spring Coil	1
44	123-2-472R-00600	Lug	3
45	141-2-472T-01201	Lug	2
46	141-2-457T-24101	Special Washer 3.2 x 6.5 x 10.45	3
47	141-0-531T-05100	Reel Plate Assy	1
48	141-2-322T-27100	Shield Plate	3
49	141-2-453T-30701	Washer 5.2 x 8.0 x 0.25 Nylon	1
50	141-2-661T-15201	Pulley, Play	1
51	141-2-452T-01200	Felt Washer	1
52	141-2-661T-16103	Pulley, FWD	1
53	141-2-453T-30100	Washer 2.1 x 4 x 0.13	2
54	141-2-457T-06200	Special Washer	1
55	141-2-453T-31200	Washer 2 x 8.5 x 0.25	1
56	141-2-457T-23700	Special Washer, Reel	2
57	141-2-562T-03300	Round Belt	1
58	141-0-531T-05200	Reel Plate Assy, Supply	1
59	141-2-453T-30101	Washer 2.1 x 4.x 0.25 Nylon	3
60	141-2-457T-11000	Special Washer	1
61	141-2-457T-06200	Special Washer	1
62	141-2-851T-62900	Spring Coil	1
63	141-2-453T-30700	Washer	1
64	141-0-662T-02100	Roller Assy	1
65	141-0-731T-18000	Slide Assy, Head Slide	1
66	141-2-855T-02201	Spring Coil, Play Slide	1
67	141-2-490T-00900	Tube	9
68	141-2-731T-46300	Slide, Play Slide	1
69	141-2-851T-14000	Spring Coil, Play Slide	1
70	141-2-490T-00300	Tube	1
71	141-2-851T-49700	Spring Coil, R/P Head	1
72	141-2-457T-30000	Special Washer 2.1 x 4.4 x 0.5	3
73	123-2-472R-00200	Lug	1
74	141-2-472T-05900	Lug	2
75	141-2-821T-11200	Tape Guide	1
76	4-242T-21600	Head R/P	1
77	4-242T-20700	Head E	1
78	141-2-375T-06800	Bracket Head, E Head	1
79	4-235T-34600	Socket E head	2
80	4-235T-43071	Socket R/P head	1
81	141-2-490T-00800	Tube	1
82	141-2-490T-00600	Tube 25mm	3
83	141-2-345T-00400	Steel Ball Head Slide	5
84	141-2-853T-45401	Spring Plate, Head Slide	1
85	141-2-853T-52400	Spring Plate, Head Slide	1
86	141-2-852T-37600	Spring Wire, Pinch Roller	1
87	141-0-731T-14300	Slide Assy, FWD	1
88	141-2-851T-61300	Spring Coil, FWD Slide	1
89	141-2-731T-46400	Slide, Rew Slide	1
90	141-2-851T-31500	Spring Coil (89)	4
91	141-2-731T-23401	Slide, Rew	1
92	141-2-741T-43001	Lever, FWD	1
93	141-2-741T-43102	Lever, Rew	1
94	141-2-855T-10400	Spring Coil, Fwd	1
95	141-2-462T-41300	Boss (97)	1
96	141-2-421T-19400	Special Screw, PCB	1
97	141-0-731T-14400	Slide Assy, FWD	1
98	141-2-851T-47802	Spring Coil	1
99	141-0-662T-02200	Roller Assy	1
100	141-0-741T-18700	Lever Assy, REW	1
101	141-2-661T-14902	Pulley, Rew Idler	1
102	141-2-457T-04100	Special Washer, Rew Idler	1
103	141-2-851T-31600	Spring Coil, Rew Idler	2
104	141-2-731T-46200	Slide, Rec	1
105	141-2-741T-93100	Lever	1
106	141-2-855T-05000	Spring Coil (105)	1
107	141-2-731T-45200	Slide	1
108	141-0-731T-14800	Slide Assy, Eject	1
109	141-0-741T-18600	Lever Assy, Eject	1
110	141-2-741T-93300	Lever, Eject	1
111	141-2-731T-46900	Slide, Eject	1
112	141-2-855T-05100.	Spring Coil (111)	1
113	141-2-741T-93400	Lever, Eject	1
114	141-2-731T-47200	Slide (115)	1
115	141-2-741T-94200	Lever, Cassette	1
116	141-2-852T-41000	Spring Wire, Cassette	1
117	141-2-462T-44200	Boss (115)	1
118	141-0-731T-14500	Slide Assy, Autostop	1
119	141-2-855T-04900	Spring Coil (118)	1
120	141-2-462T-41000	Boss (118)	1
121	141-0-731T-14600	Slide Assy, Lock Slide	1
122	141-2-851T-74000	Spring Coil, Lock Slide	1
123	141-2-737T-04700	Bracket Slide	1
124	141-2-612T-03600	Shaft Push Butom	1
125	141-2-853T-45200	Spring Plate (124)	2
126	141-2-855T-04800	Spring Coil	7
127	141-2-731T-45600	Slide, Stop Mut.	1
128	141-2-731T-55200	Slide, Play Mut.	1
129	141-2-735T-10400	Rod	1
130	141-2-731T-45700	Slide, Rec	1
131	141-2-731T-45500	Slide, Play to Rec	1
132	141-2-851T-59701	Spring Coil (131)	1
133	141-2-737T-04600	Bracket Slide	1
134	141-2-737T-04801	Bracket Slide	1
135	141-2-472T-02200	Lug	1
136	141-0-731T-14701	Slide Assy, Pause	1
137	141-0-369T-00300	Bracket Coil Assy	1
138	141-2-614T-05300	Lever Lock, Pause	1
139	141-2-852T-35600	Spring Wire (138)	1
140	141-2-457T-23000	Special Washer	2
141	4-264T-07000	Magnetic Coil	1
142	141-2-741T-93702	Lever, Pause Release	1
143	141-2-855T-06100	Spring Coil, Magnetic Coil	1
144	141-2-488T-01204	Pin, Magnetic Coil	1
145	4-231T-61600	Switch, Pause ON	1
147	141-9-611T-01300	Lever Push Button Ass'y, (Silver) EJECT	1
	141-9-611T-10000	Lever Push Button Ass'y (Black), EJECT	1
148	141-9-611T-01301	Lever Push Button Ass'y (Silver) REC	1
	141-9-611T-10001	Lever Push Button Ass'y (Balck), REC	1
149	141-9-611T-01302	Lever Push Button Ass'y (Silver), REW, PLAY, F.FWD	3
	141-9-611T-10002	Lever Push Button Ass'y (Black), REW PLAY, F. FWD	3
150	141-9-611T-10003	Lever Push Button Ass'y (Black), STOP	1
	141-9-611T-10003	Lever Push Button Ass'y (Black), STOP	1
151	141-9-611T-01304	Lever Push Button Ass'y (Silver) PAUSE	1
	141-0-611T-10100	Lever Push Button Ass'y (Black), PAUSE	1
152		Graphite Nylon Washer,3 x 6 x 0.13mm	1

EXPLODED VIEW (MECHANISM)


Y14
46
44
Y14
45
Y6
Y7
Y6
31
Y23
Y6
41
31
31
Y6
31
43
42
39
Y14
46
44
Y14
40
45
Y11
30
Y2
17
146
20
Y5
19
20
Y5
26
59
99
96
ⓔ
Y20
97
95
91
92
94
122
ⓘ
121
ⓗ
35
ⓙ
ⓚ
Y8
102
101
67
103
100
123
36
5
7
108
ⓒ
Y12
Y12
ⓓ
104
Y12
113
105
106
Y12
69
70
68
67
ⓐ
89
ⓕ
67
ⓒ
ⓓ
90
67
88
98
103
129
ⓔ
ⓕ
ⓖ
90
ⓗ
87
ⓖ
Y12
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11
Y13
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Y11
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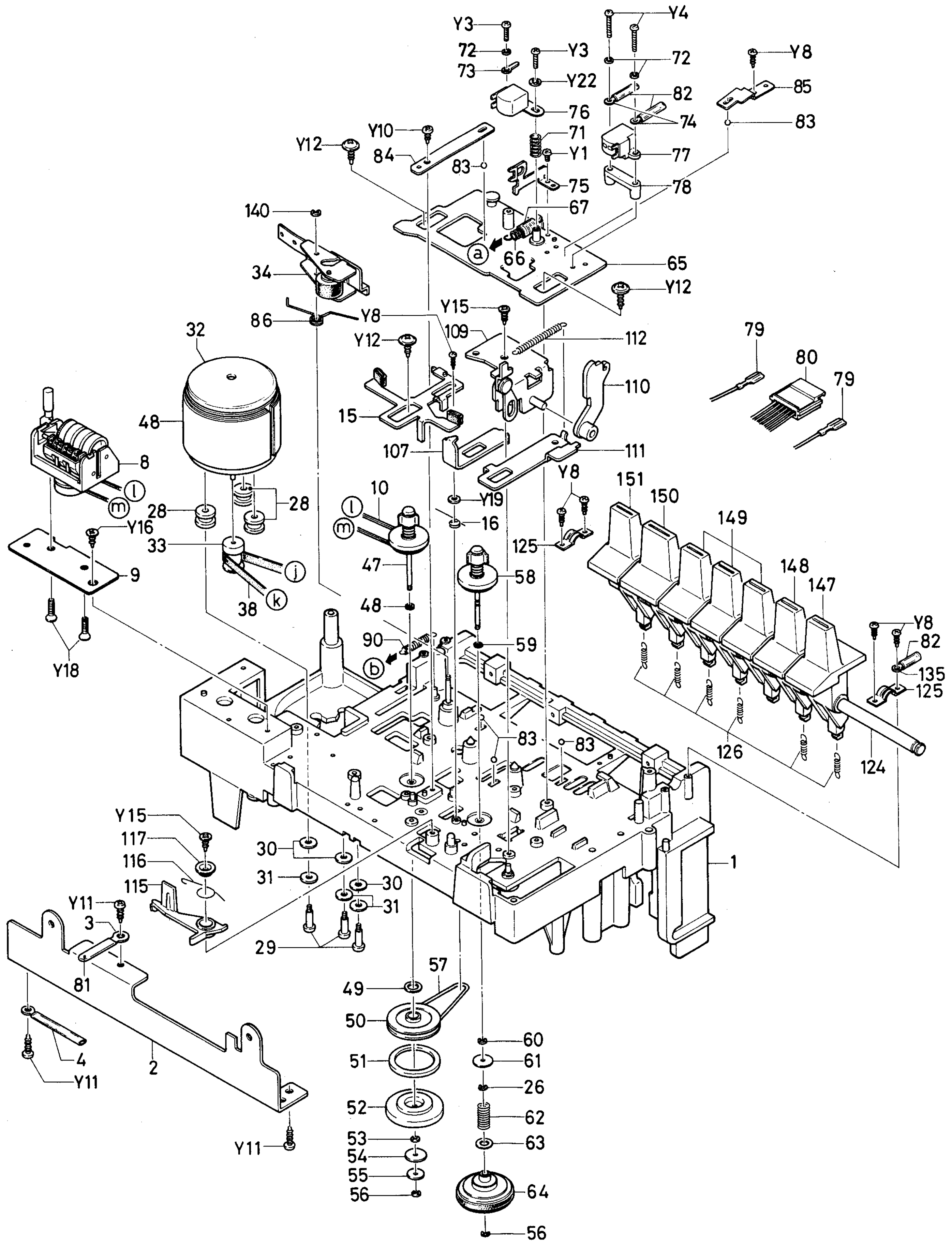
Y11
Y11
159
Y101
160
136
128
Y11
Y11
Y11
24
Y12
25
26
126
130
134
ⓑ
127
21
ⓘ
131
132
67
Y9
Y21
145
114
140
18
139
138
152
144
Y12
142
Y12
141
143
141
Y12
13
173
Y16
1
27
23
6
37
Y12
Y15
137
Y17


Y3
Y4
72
73
Y3
72
Y22
Y8
85
82
74
76
83
Y10
71
Y1
77
Y12
84
83
75
78
67
140
ⓐ
66
65
34
Y12
Y15
86
Y8
109
112
32
Y12
79
80
79
110
15
48
8
107
111
ⓛ
ⓜ
28
28
Y8
151
150
10
Y19
149
Y16
16
125
ⓛ
ⓜ
33
9
47
58
148
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ⓙ
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ⓚ
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Y8
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Y18
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Y15
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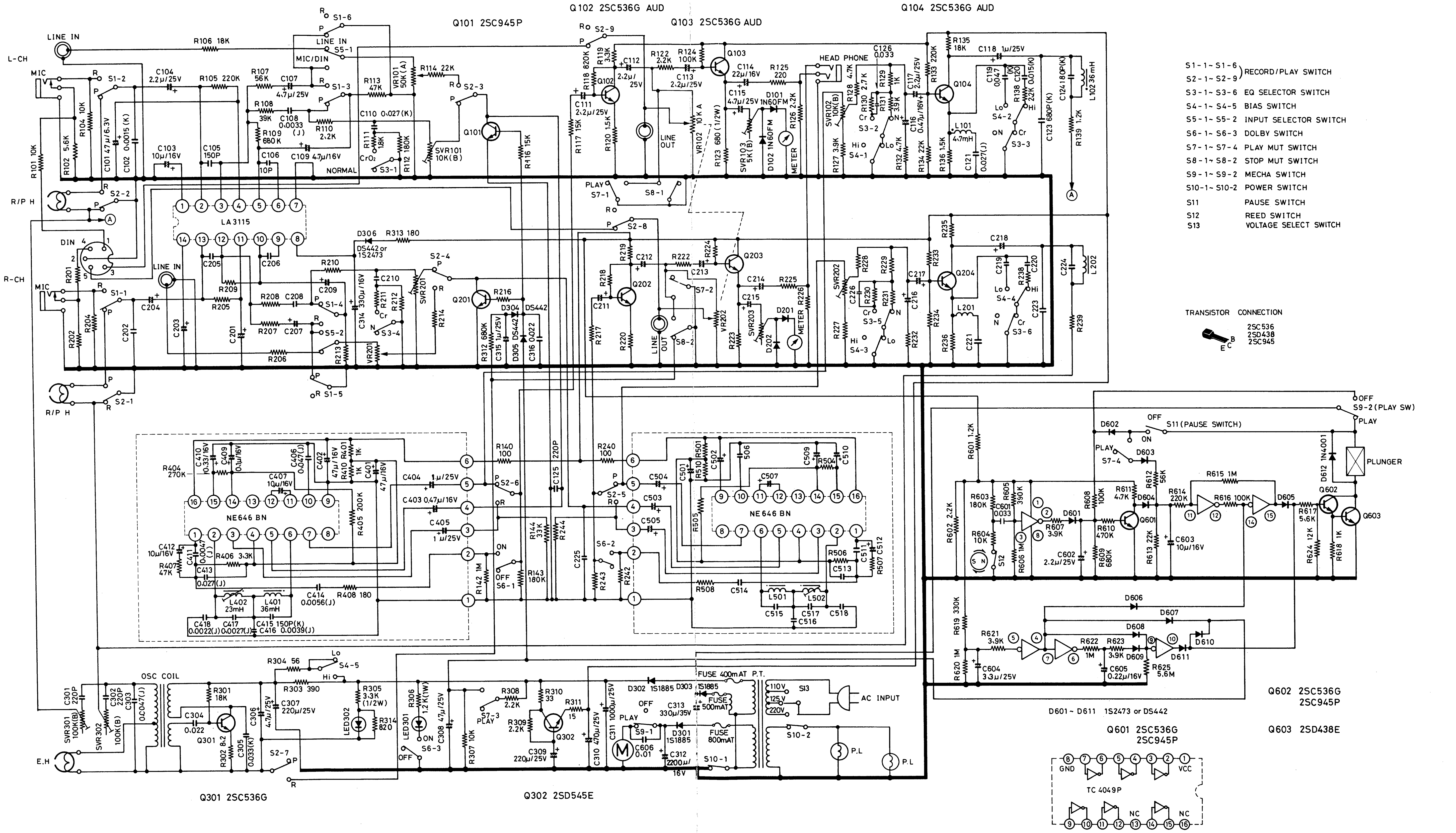
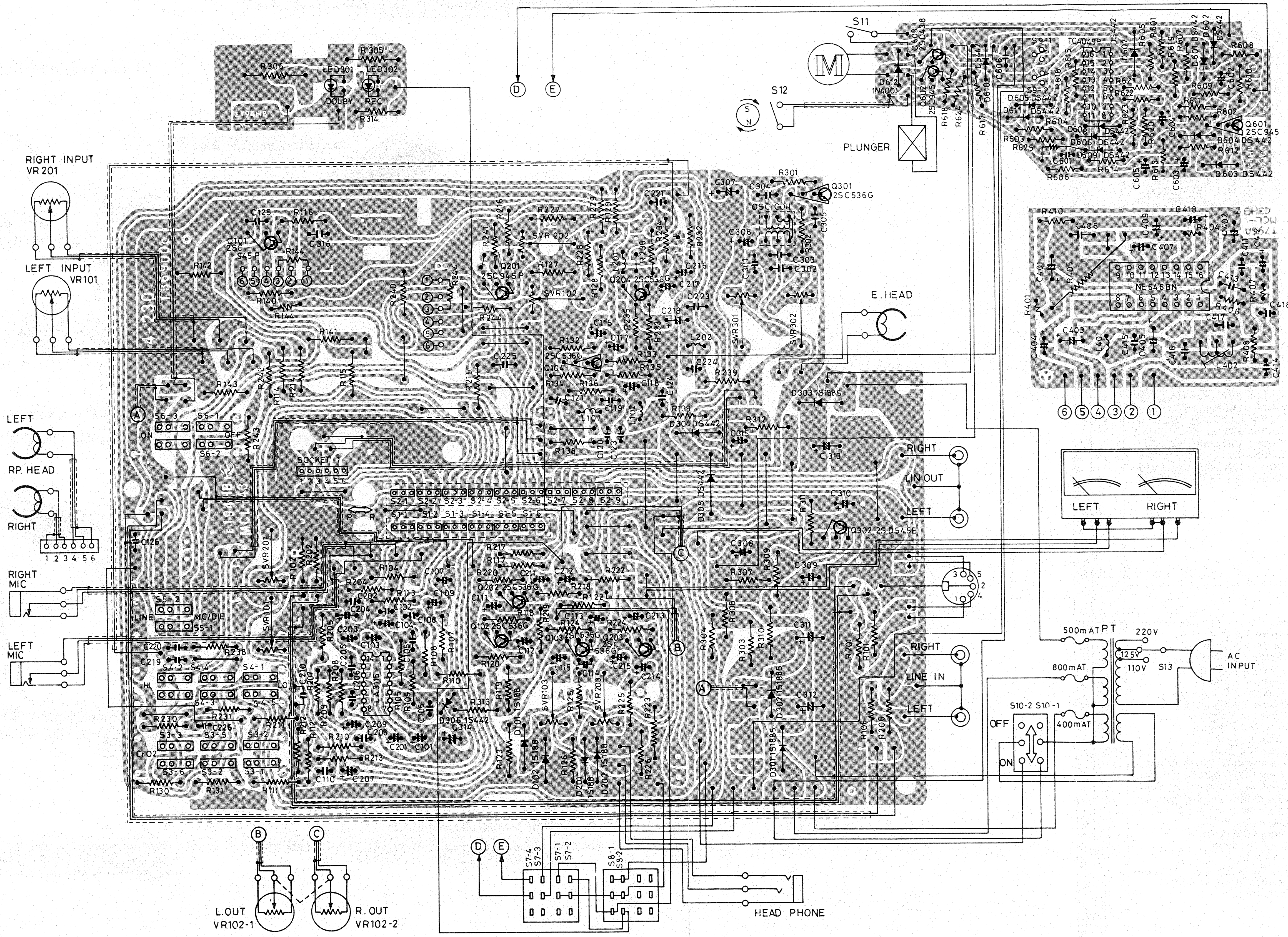
30
1
115
31
Y11
3
29
81
49
57
50
60
51
61
26
4
2
52
62
Y11
53
63
54
55
56
64
Y11
56

SCHEMATIC DIAGRAM


S1-1~S1-6
S2-1~S2-9 RECORD/PLAY SWITCH
S3-1~S3-6 EQ SELECTOR SWITCH
S4-1~S4-5 BIAS SWITCH
S5-1~S5-2 INPUT SELECTOR SWITCH
S6-1~S6-3 DOLBY SWITCH
S7-1~S7-4 PLAY MUT SWITCH
S8-1~S8-2 STOP MUT SWITCH
S9-1~S9-2 MECHA SWITCH
S10-1~S10-2 POWER SWITCH
S11 PAUSE SWITCH
S12 REED SWITCH
S13 VOLTAGE SELECT SWITCH
TRANSISTOR CONNECTION
2SC536
2SD438
2SC945
E C B
Q101 2SC945P
Q102 2SC536G AUD
Q103 2SC536G AUD
Q104 2SC536G AUD
Q301 2SC536G
Q302 2SD545E
Q601 2SC536G
2SC945P
Q602 2SC536G
2SC945P
Q603 2SD438E
D601~D611 1S2473 or DS442
TC 4049P
GND
VCC
NC
LA3115
NE646 BN
L-CH
R-CH
LINE IN
MIC
R/P H
DIN
HEAD PHONE
LINE OUT
METER
PLUNGER
OSC COIL
E.H
AC INPUT
FUSE 400mA T P.T.
110V
125V
220V
P.L
S9-2(PLAY SW)
S11(PAUSE SWITCH)
OFF
ON
PLAY
NORMAL
CrO₂
LINE IN
MIC/DIN
Lo
Hi
Cr
N
R
P

WIRING DIAGRAM



RIGHT INPUT
VR 201
LEFT INPUT
VR101
LEFT
RP. HEAD
RIGHT
1 2 3 4 5 6
RIGHT
MIC
LEFT
MIC
R306
R305
LED301
LED302
DOLBY
REC
R314
E194HB
S11
S12
M
PLUNGER
D612
1N4001
Q603
2SC945
Q602
2SC945
R618
R624
R617
D610
D611
C606
S9-1
S9-2
TC4049P
D607
D605 DS442
D608
D606 DS442
D609 DS442
R601
R605
R608
R609
R610
R611
R612
R613
R614
R615
R616
R619
R620
R621
R622
R623
R625
R603
R604
R602
R606
C601
C602
C603
C604
C605
D601 DS442
D602
D603 DS442
D604 DS442
Q601
2SC945
D
E
R301
Q301
2SC536G
C307
C304
OSC COIL
C305
C306
C303
C302
C301
R302
E.HEAD
SVR301
SVR302
C221
C216
C217
C218
C223
C224
L202
R239
R232
R227
SVR 202
R228
R229
R129
R241
R216
Q201
2SC945P
R127
SVR102
Q204 2SC536G
R236
R235
R233
R128
C116
C117
R132
2SC536G
Q104
R133
R135
R136
R134
C118
C121
C119
L101
C124
L102
R139
D304 DS442
D303 1S1885
R312
C315
C313
C125
R116
C316
Q101
2SC945P
R144
R142
R140
R141
R143
R242
R114
R214
R115
R240
R244
R215
C225
1 2 3 4 5 6
S6-3
S6-1
S6-2
ON
OFF
R243
A
SOCKET
1 2 3 4 5 6
S2-1 S2-2 S2-3 S2-4 S2-5 S2-6 S2-7 S2-8 S2-9
S1-1 S1-2 S1-3 S1-4 S1-5 S1-6
P
R
E194HB
MCL-143
R138
D305 DS442
R311
C310
Q302 2SD545E
RIGHT
LIN OUT
LEFT
C
C308
R307
R309
C309
C126
SVR201
R102
R202
R104
R204
C107
C109
R217
R117
C211
C212
R220
Q202 2SC536G
R218
R222
R122
C111
R113
C108
R118
R219
C113
R124
R224
C213
Q102 2SC536G
Q103 2SC536G
Q203
2SC536G
B
S5-2
LINE
MIC/DIE
S5-1
SVR101
R205
C203
C103
C105
R107
R108
R110
R120
C115
C114
C215
C214
C220
C219
R238
S4-2
S4-4
S4-1
HI
S4-3
S4-5
C210
R207
R208
C205
LA3115
R101
R109
C106
D306 1S442
C314
R313
R119
SVR103
R126
SVR203
R225
R223
D101 1S188
D102 1S188
R123
R126
D201
D202 1S188
R226
R230
R231
C226
R211
S3-3
S3-5
S3-2
CrO2
S3-6
S3-2
S3-1
R130
R131
R111
R209
R210
C209
C208
C201
C101
R213
C110
C207
R304
R308
R303
R310
C311
D302 1S1885
C312
D301 1S1885
R201
R101
R106
R206
RIGHT
LINE IN
LEFT
3 5 2 4
R410
C410
R404
C402
C406
C409
C407
C401
R405
9 10 11 12 13 14 15 16
NE646BN
8 7 6 5 4 3 2 1
C411
C412
C413
R401
R407
R406
C418
C417
C403
C404
L401
C415
C405
C416
R408
L402
C414
E194HB
MCL-
⑥⑤④③②①
LEFT
RIGHT
500mAT
PT
220V
125V
110V
S13
AC INPUT
800mAT
400mAT
S10-2 S10-1
OFF
ON
Ⓑ
Ⓒ
L.OUT
VR102-1
R.OUT
VR102-2
Ⓓ
Ⓔ
S7-4
S7-3
S7-1
S7-2
S8-1
S9-2
HEAD PHONE

PARTS LIST

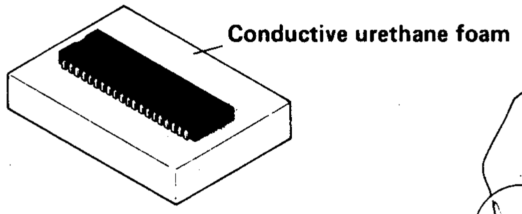
Ref. No.	Part No.	Description	Q'ty
MECHANISM PCB ASSY			
146	141-9-230T-67600	P.C. Board Assy	1
		IC TC4049 P	1
Q601,602		Transistor 2SC945 P	2
Q603		Transistor 2SD438 E	1
D612		Diode 1N4001	1
D601~D611		Diode DS442 or 1S2473	11
	4-231T-50271	Switch	1
	CAPACITORS		
C603		Electrolytic 10μF 16V	1
C602		Electrolytic 2.2μF 25V	1
C605		Electrolytic 0.22μF 16V ±20%	1
C606		Mylar 0.01μF 50V ±20%	1
C601		Mylar 0.033μF 50V ±20%	1
C604		Electrolytic 3.3μF 25V	1
	RESISTORS		
R606,615, 620,622		Carbon 1M ohm ±5% 1/4W	4
R609		Carbon 680K ohm ±5% 1/4W	1
R614		Carbon 220K ohm ±5% 1/4W	1
R603		Carbon 180K ohm ±5% 1/4W	1
R608,616		Carbon 100K ohm ±5% 1/4W	2
R612		Carbon 39K ohm ±5% 1/4W	1
R613		Carbon 22K ohm ±5% 1/4W	1
R617		Carbon 5.6K ohm ±5% 1/4W	1
R611		Carbon 4.7K ohm ±5% 1/4W	1
R607,621, 623		Carbon 3.9K ohm ±5% 1/4W	3
R602		Carbon 2.2K ohm ±5% 1/4W	1
R601		Carbon 1.2K ohm ±5% 1/4W	1
R618		Carbon 1K ohm ±5% 1/4W	1
R619		Carbon 330K ohm ±5% 1/4W	1
R605		Carbon 390K ohm ±5% 1/4W	1
R604		Carbon 10K ohm ±5% 1/4W	1
R610		Carbon 470K ohm ±5% 1/4W	1
R624		Carbon 12K ohm ±5% 1/4W	1
R628		Carbon 565 ohm ±5% 1/4W	1
MECHANISM SCREWS			
Y 1		Pan Head Screw 2 x 2mm	1
Y 2		Pan Head Screw 2 x 6mm	1
Y 3		Pan Head Screw 2 x 8mm	2
Y 4		Pan Head Screw 2 x 12mm	2
Y 5		Pan Head Screw 3 x 4mm	2
Y 6		Pan Head Screw 3 x 8mm	4
Y 7		Pan Head Screw 3 x 10mm	1
Y 8		Tapping Screw 2.3 x 6mm	7
Y 9		Tapping Screw 2.3 x 8mm	1
Y10		Tapping Screw 3 x 6mm	1
Y11		Tapping Screw 3 x 8mm	10
Y12		Tapping Screw with Washer 3 x 6mm	11
Y13		Tapping Screw with Washer 3 x 8mm	3
Y14		Tapping Screw with Washer 3 x 10mm	4
Y15		Flat Head Tapping Screw 3 x 6mm	3
Y16		Flat Head Tapping Screw 3 x 8mm	2
Y17		Flat Head Screw 3 x 5mm	2
Y18		Flat Head Screw 3 x 6mm	2
Y19		Washer 2.3 x 6 x 0.4mm	1
Y20		Washer 3 x 13 x 1mm	1
Y21		Washer 2.3 x 4.3 x 0.4mm	1
Y22		Internal Toothlock Washer 2.6mm	1
Y23		Hexagon Nut 3mm	1

SUGGESTIONS FOR HANDLING LSI

(1) In the case of transit or storage

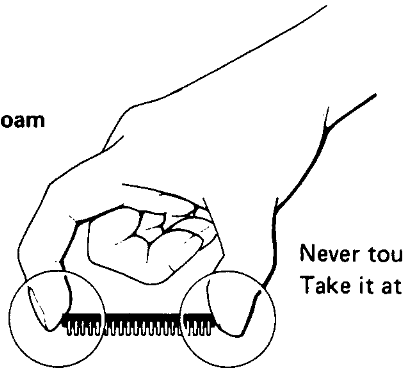
LSI (large-scale integrated circuit) is extremely sensitive and vulnerable to static electricity, and may be damaged if it is exposed to a strong electrostatic field. So, be careful to avoid such a possibility when carrying or storing LSI's.

(a) To store the LSI



Be sure to keep the LSI inserted in the conductive urethane foam until it is put to use. (This is for keeping the potential at each terminal equal.)

(b) How to handle the LSI



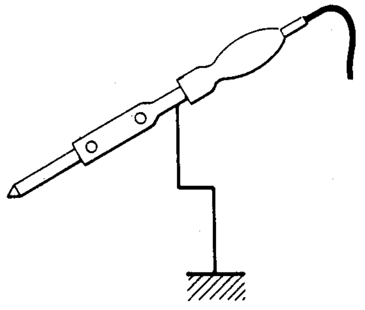
Never touch the LSI terminals.
Take it at both ends of the package.

(C) To store the LSI, avoid places where temperature or humidity is high, or where there is a strong magnetic field.

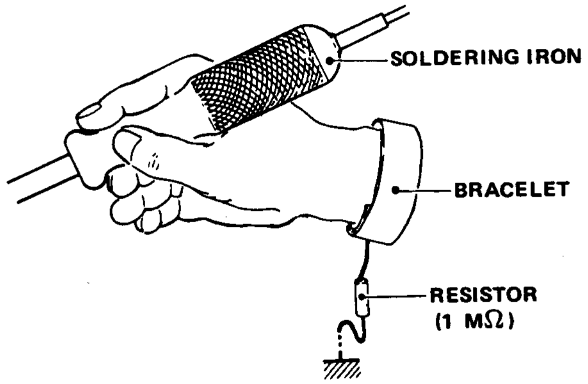
(2) Suggestions for repairing

(a) Before replacing the LSI, be sure to pull out the power plug. Also, be sure to short-circuit the designated electrolytic condensers (C716, C751, and C752) and discharge them.

(b) All the equipment, measuring instruments, and tools should be grounded.
Ground the work table by covering it a conductive sheet.



Ground the soldering iron in order to prevent the AC leakage.



The repairman should ground his body electrically by touching the ground line with his hand before he handles the LSI.

(3) Suggestions for replacement of LSI

(a) There is a mark on one side of the LSI. This is for preventing you from inserting the LSI in a wrong way.

(b) If power is supplied to the unit with the LSI inserted in a wrong way, the LSI must be discarded. (The LSI may still be good immediately after, but it will break down in the course of use.)